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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CARGILL, INCORPORATED			NIEBAUER, RONALD T	
P.O. Box 5624				
MINNEAPOLIS, MN 55440-5624			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,859	Applicant(s) CHENAULT ET AL.	
	Examiner RONALD T. NIEBAUER	Art Unit 1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42,44-49,52,56,58 and 59 is/are pending in the application.
- 4a) Of the above claim(s) 58 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42,44-49,52 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/29/09; 1/28/09</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants amendments and arguments filed 4/29/09 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed is herein withdrawn.

As noted previously Applicant's elected with traverse Group II and the following species:
Protein material – turkey feathers
Alkaline material – sodium hydroxide.

Claims 1-41,43,50-51,53-55,57,60-61 have been cancelled. Claims 58,59 correspond to original group I and claims 42,44-49,52,56 correspond to original group II. In the instant case, the elected species have been found in the prior art as discussed below. Any art that reads on non-elected species that was uncovered in the search for the elected species is cited herein.

Claims 58-59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/3/08.

Claims 42,44-49,52,56 are under consideration

Information Disclosure Statement

The information disclosure statement filed 4/29/09 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

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The IDS of 4/29/09 lists a single NPL document. However, the NPL document provided by the applicant is not legible. In particular, at least the first 2 pages of the supplied document are illegible.

The information disclosure statement (IDS) submitted on 1/28/09 has been considered by the examiner.

Claim Rejections - 35 USC § 112

This 112 2nd rejection is necessitated by applicants amendments.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 44 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 44 refers to claim 43. However, claim 43 has been cancelled. As such, the dependency of claim 44 is unclear.

Claim Rejections - 35 USC § 103

Claims were previously rejected under 103 using the references cited in this rejection. Since claims have been amended the rejection has been updated.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 42,44-49,52,56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al (US 4,591,497; first cited in office action 2/2/09) and Kawasaki (WO 90/01023 as cited in IDS 12/15/05 cite B1) and Blanch et al, (Biochemical Engineering, 1997, Marcel Dekker, pages 467-468 (total of 4 pages); first cited in office action 2/2/09).

Naito teach the mixing of feathers and caustic soda (i.e. sodium hydroxide) followed by hydrolysis (column 4 lines 24-29). Thus Naito teach contacting reactants and creating a reaction mix. Naito teach that 100g of feathers and 3 liters of 0.3N caustic soda (i.e. sodium hydroxide) were used (column 4 lines 24-29). As such the mass of sodium hydroxide is $0.3 \text{ mol/l} \times 40 \text{ g/mol} = 36\text{g}$. Since there are 3 liters of liquid and 100g of feathers the total mass is 3100g. Thus the

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wt% of sodium hydroxide is $(36\text{g}/3100\text{g}) \times 100 = 1.2\%$ as recited in claim 46 of the instant invention. Naito teach sodium hydroxide as recited in claims 45,47 of the instant invention.

Naito teach that after neutralization the product was filtered and the filtrate was subjected to ultrafiltration using a membrane with a fractional molecular weight of 500 (column 4 lines 30-39). Thus Naito teach separating the product by filtration. Naito teach that the concentrate had a molecular weight of 1800 (column 4 lines 37-38). Naito teach that the concentrate was freeze dried (column 4 lines 35-36). Thus Naito teach drying of the concentrate. Naito teach that formulations of the hydrolysate were made in water (column 4 lines 60-67, column 5 lines 20-35 for example). Thus Naito teach formulating water soluble compositions with the dried concentrate. Naito teach that the composition can be used in any known form (abstract).

Naito does not expressly teach the source of the feathers that are used as recited in claims 42,44 of the instant claims. Naito does not expressly teach the temperature recited in claim 48 or the time period recited in claim 49. Naito does not expressly recite the pore size of the filters that are used as recited in claims 42,52 of the instant invention. Naito does not expressly teach the use of spray drying as recited in claim 42.

Naito does teach that a range of starting materials can be used (column 2 lines 40-43) for the hydrolysis including feathers.

Kawasaki also teach hydrolysis of feathers, specifically turkey feathers (example 1 page 12). Both Kawasaki and Naito teach hydrolysis of feathers and thus address a particular problem in the art. Although Naito does not expressly recite the source of the feathers one would be motivated to use a specific source of feathers. In the instant case, the claims would have been

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obvious because the substitution of one known element (i.e. turkey feathers) for another (i.e. feathers) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Thus the material limitations of claims 42,44 are met. One would have a reasonable expectation of success since Naito does teach that a range of starting materials can be used (column 2 lines 40-43) for the hydrolysis including feathers.

Naito teach that the hydrolysis can be carried out with a variety of known methods (column 2 lines 48-50). In one example Naito teach the use of a temperature of 120-130C for 5 hours (column 4 line 15).

Kawasaki also teach a variety of hydrolysis conditions and expressly recites a preferable temperature of 100C (page 4 lines 27-30). Kawasaki recognizes that the efficiency of the process is affected by numerous factors (page 6 lines 13-15) and teach that the processing time can be varied (page 8 lines 27-31). Kawasaki teach a range of pH values (claim 5). It would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g.temperature, pH, concentration, time of process), because such conditions are art-recognized result-effective variables that are routinely determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05). One would recognize that there are numerous variables involved in the process and one would be motivated to alter the variables to optimize the cost or the yield or the length of the reaction so that more reactions can be carried out over a given period of time. As such, the limitations of claims 48-49 of the instant invention are met. One would have a reasonable

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expectation of success since both Naito and Kawaski recognize that a range of processing variables can be used to carry out the hydrolysis. In particular, since Naito teach the use of a temperature of 120-130C for 5 hours (column 4 line 15) one would recognize such conditions as a workable range.

Naito teach that after neutralization the product was filtered (column 4 lines 30-32).

Although Naito does not expressly teach the size of the filter that was used in the filtering step one would recognize that the removal of unwanted impurities and contaminants as a common purification step. Blanch teach that filtration offers many advantages as a purification step (page 467 last paragraph). Blanch teach that microporous membranes in the range of 0.1-10 micron are commonly used (Table 6.5 page 468). Since Naito teach an ultrafiltration step after the initial filtration (column 4 lines 30-39) one would be motivated to remove any larger sized contaminants to avoid fouling of the ultrafiltration membrane. As such, one would be motivated to use a membrane such as a membrane of 5 micron based on Table 6.5 of Blanch. In other words, although Naito does not expressly recite the size of the filter in the first filtering step one would be motivated to use a 5 micron filter as is commonly used in the art thus meeting the limitation of claim 56 of the instant invention. One would have a reasonable expectation of success since Naito teach that after neutralization the product was filtered (column 4 lines 30-32) and filtration to remove debris is common in the art as taught by Blanch (see Table 6.5 page 468).

Naito teach ultrafiltration using a membrane with a fractional molecular weight of 500 (column 4 lines 30-39).

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Although Naito does not expressly teach the pore size of the membrane, Blanch teach ultrafiltration membranes (Table 6.5 page 468) of pore size from 0.001-0.1 micron (10-1000 Angstrom). Further, one would recognize that a relatively small pore size would be necessary to achieve the molecular weight cut-off of 500. Thus one would be motivated to use membrane filters as recited in claims 42,52 of the instant invention. One would have a reasonable expectation of success since Naito teach ultrafiltration using a membrane with a fractional molecular weight of 500 (column 4 lines 30-39) and a variety of ultrafiltration membrane sizes are common in the art as taught by Blanch (see Table 6.5 page 468).

Naito teach drying of the hydrolysate (column 4 lines 21-23, 34-36). One would recognize that a dry product is desirable and that spray drying is a well known technique that provides products with desirable properties. As such one would be motivated to substitute spray drying for the drying process described by Naito thus meeting the limitation recited in claim 42. The claims would have been obvious because the substitution of one known technique (i.e. spray drying) for another (i.e. freeze drying) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. One would have a reasonable expectation of success since Naito teach drying of the product (column 4 lines 21-23, 34-36).

Naito teach that formulations of the hydrolysate were made in water (column 4 lines 60-67, column 5 lines 20-35 for example). Thus Naito teach formulating water soluble compositions with the dried concentrate. Naito teach that the composition can be used in any known form (abstract).

Thus, taken together the references obviate the instant claims. In the instant case, Naito teach the active steps of contacting (column 4 lines 24-29), separating (column 4 lines 30-39),

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drying (column 4 lines 35-36) and formulating (column 5 lines 20-35 for example). In combination with the other references the claim limitations are met.

It is noted that the instant claims recite ‘to produce a water soluble fertilizer’, ‘product is obtained which comprises peptones’. Since the references obviate the active steps the products as claimed would be produced. It is noted that Naito teach formulating a composition of the concentrate (column 5 lines 20-35 for example). In accord with section 2111 of the MPEP the claims are given the broadest reasonable interpretation. In the instant case, there is nothing to preclude the product of the prior art from being a fertilizer. In other words, the recitation of ‘to produce a water soluble fertilizer’ does not require a manipulative or structural difference and is treated as an intended use (see MPEP section 2111.02 II).

It is noted that the instant claims recite ‘wherein substantially all’. Naito teach that after neutralization the product was filtered and the filtrate was subjected to ultrafiltration using a membrane with a fractional molecular weight of 500 (column 4 lines 30-39). Naito teach that the concentrate had a molecular weight of 1800 (column 4 lines 37-38). Thus the claim limitations are met, absence evidence to the contrary.

Although unclear (see 112 2nd) claim 44 has been interpreted as depending from claim 42.

Response to Arguments 103 rejection

Applicants argue that the method provides a surprising finding that is discussed in an article cited in the IDS of 4/29/09 which describes the water solubility and molecular weight distribution, for example.

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Applicants state aspects of the Naito disclosure and then argue that Kawasaki and Blanch do not describe preparation of a water soluble fertilizer. Applicants argue that there is no reason to consider making a fertilizer composition.

Applicant's arguments filed 4/29/09 have been fully considered but they are not persuasive.

Although Applicants argue that the method provides a surprising finding that is discussed in an article cited in the IDS of 4/29/09 which describes the water solubility and molecular weight distribution, for example, it is first noted that as discussed above the information disclosure statement filed 4/29/09 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The IDS of 4/29/09 lists a single NPL document. However, the NPL document provided by the applicant is not legible. In particular, at least the first 2 pages of the supplied document are illegible. Although the NPL document has not been fully considered in order to advance prosecution applicants arguments will be addressed. It is noted that section 2145 I of the MPEP states that the arguments of counsel cannot take the place of evidence in the record. In the instant case, it appears that applicants are arguing an unexpected result. It is noted that section 716.01(b) of the MPEP states that evidence must be related to the claimed invention. In the instant case, the claims are drawn to methods of making a product. However, it appears that applicants arguments are drawn to the properties involved with using the product. In other words the instant claims recite the word 'fertilizer' (which is given the broadest reasonable

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interpretation), but the claims do not recited specific active steps of using the fertilizer. Further, section 716.03(b) of the MPEP states that commercial success must be directly derived from the claimed invention. It is noted that section 716.01(c) III of the MPEP states that the examiner must consider the interest of the expert in the outcome of the case when assessing evidence. In the instant case, the IDS 4/29/09 states that the article is from Cargill News. The assignee of the instant application is Cargill.

Although Applicants state aspects of the Naito disclosure and then argue that Kawasaki and Blanch do not describe preparation of a water soluble fertilizer, and argue that there is no reason to consider making a fertilizer composition, it is noted that the instant rejection is a multiple reference 103 rejection. As such, any single reference does not necessarily teach each of the claim limitations. The 103 rejection and particular claim limitations are discussed above. In the instant case, the claims have been amended to recite ‘to produce a water soluble fertilizer’. First, it is noted that Naito teach that formulations of the hydrolysate were made in water (column 4 lines 60-67, column 5 lines 20-35 for example). Thus Naito teach formulating water soluble compositions with the dried concentrate. In accord with section 2111 of the MPEP the claims are given the broadest reasonable interpretation. In the instant case, there is nothing to preclude the product of the prior art from being a fertilizer. In other words, the recitation of ‘to produce a water soluble fertilizer’ does not require a manipulative or structural difference and is treated as an intended use (see MPEP section 2111.02 II). In other words, the prior art obviate the active steps and thus would meet the claim limitations and intended use. If the steps of the claims are carried out the product of the claims should be made, otherwise the claim would be missing critical active steps. The recitation of ‘to produce a water soluble fertilizer’ is an

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outcome of the active steps. Further, although not relied upon in this rejection, art cited in the IDS of 12/15/05 (cite C4) clearly teach that hydrolysates, specifically from feathers, are known to be used as fertilizers.

Conclusion

The 112 2nd rejection is necessitated by applicants amendments.

Claims were previously rejected under 103 using the references in this rejection. Since claims have been amended the rejection has been updated. As such, applicants claim amendments have necessitated any new rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD T. NIEBAUER whose telephone number is (571)270-3059. The examiner can normally be reached on Monday-Thursday, 7:30am-5:00pm, alt. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anish Gupta/
Primary Examiner, Art Unit 1654

/Ronald T Niebauer/

Examiner, Art Unit 1654